

REMARKS

In the Office Action, the Examiner continued to reject claims 1-5 for being obvious over Hernandez. However, Applicants believe the claims are not obvious over Hernandez for the following reasons.

In the past when a sewing thread formed out of PTT filament was used to impart stretchability to seams, it was found to be incompatible with its sewing performance at high speed. See page 3, line 14 to page 4, line 1 of the specification.

As a result of a diligent investigation by the Applicants to solve this problem, they found that while the breaking elongation of a sewing thread greatly contributes to imparting high stretchability to the seams, it is important to suppress the instantaneous elastic recovery of the sewing thread to stabilize loop formation and improve its sewing performance at high speed.

Based on the above, the Applicants found that a PTT sewing thread consistent with the above and as defined in claim 1, namely, one having a breaking elongation of 30 to 100% and an instantaneous elastic recovery at 5% elongation of 30 to 65%, can be produced by a wet heat treatment of spun yarns at 90°C or higher. See page 19, lines 21-31 of the specification. In other words, the sewing thread of the present invention is different from a sewing thread typically formed out of PTT staple fiber of 30% or more. This is clearly demonstrated in Table 1 on page 34 of the specification which shows the physical properties of a beginning spun yarn and Table 2 which shows the physical properties of the resulting sewing thread. Note that while the spun yarn and the sewing thread both have the claimed breaking elongation of 30 to 100%, only the sewing thread has the claimed elastic recovery at 5% elongation of 30 to 65%. In the spun yarn it is higher than 65%.

Hernandez relates to a PTT tetrachannel cross-section staple fiber and discloses spun yarns formed out of the PTT fiber (see Table 8). Significantly, there is no disclosure in Hernandez of a sewing thread made out of the spun yarn. Moreover, there is no disclosure or suggestion in the reference regarding the technical concept of the present invention of maintaining a high breaking elongation of the thread for the purpose of imparting high stretchability to seams formed of it, while suppressing the instantaneous elastic recovery of the sewing thread for the purpose of improving its sewing performance at high speed.

Nor is there any disclosure or suggestion in Hernandez regarding a wet heat treatment of the spun yarns at 90°C or higher. The yarn shown in Table 8 of Hernandez is the spun yarn itself produced in the spinning process.

Thus the spun yarns disclosed in Hernandez correspond to the spun yarns disclosed in Table 1 on page 34 of the specification (which is the raw material for the sewing thread of the present invention). Consequently, the spun yarns disclosed in Hernandez do not have the features of the sewing thread of claim 1. As clearly shown in Table 1, such spun yarns and thus those also of Hernandez, may have the claimed breaking elongation (Examples 1-4 and Comp. Ex. 2), but they do not have, at the same time, the claimed elastic recovery at 5% elongation.

In summary, because of the above described treatment process, the sewing thread of the present invention has specific properties clearly different from the spun yarns disclosed in Hernandez as confirmed by the data in Table 1 on page 34. Accordingly, in view of the advantages resulting from the “sewing thread” of claim 1, namely, improved sewing performance while maintaining high breaking elongation, it

cannot be considered obvious over Hernandez. Its withdrawal as a ground of rejection of the claims under § 103(a) is therefore requested.

It is believed claims 1-5 are in condition for allowance.

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Respectfully submitted,

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